

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

THIS PAGE BLANK (USPTO)



09/806816

(1) AU-A1-46,304/79

JC08 Rec'd PCT/PTO 02 APR 2001

ATION

(21)	46,304/79	(22)	20.4.79	(24)	20.4.79
(43)	23.10.80				
(51) ²	B65B 67/04				
(54)	Bag support				
(75)	Suominen, H.S.				
(74)	WM				
(57)	Claim				

9. Apparatus for supporting at least one bag in an extended loading position, comprising:

support means for engaging a rear aperture in the rear wall of a bag when the bag is in said extended loading position, and

hanger means positioned opposite said support means for engaging a front aperture in the front wall of a bag when the bag is in said extended loading position.

COMMONWEALTH OF AUSTRALIA

Form 10

PATENTS ACT 1952-69

COMPLETE SPECIFICATION

(ORIGINAL)

Class

Int. Class

Application Number:
Lodged:

Complete Specification Lodged:

Accepted:

Published:

Priority:

Related Art:

Name of Applicant: HEIKKI S. SUOMINEN

Address of Applicant: Petsamonk 14, Tampere, Finland

Actual Inventor: SAME AS APPLICANT

Address for Service: EDWD. WATERS & SONS,
50 QUEEN STREET, MELBOURNE, AUSTRALIA, 3000.

Complete Specification for the invention entitled:

"BAG SUPPORT AND DISPENSING APPARATUS"

The following statement is a full description of this invention, including the best method of performing it known to me:

BAG SUPPORT AND DISPENSING APPARATUS

Description

Technical Field

5 The invention relates to a bag support and dispensing apparatus and, more particularly, to such an apparatus that may be conveniently mounted on a support rack to load and dispense a plurality of bags.

Background Art

10 In the U.S. patents to Suominen, No. 3,858,382 and No. 3,973,376, there is disclosed a bag support apparatus including a shaft that passes through aligned apertures in the front and rear walls of a plurality of stacked plastic bags. The top portion of the front wall of each bag has an aperture that is
15 sufficiently large to pass an enlarged flange that is affixed to the free end of the shaft. Thus, when the front edge of the bag is pulled outwardly, the flange passes through the large aperture in the front wall and a corresponding smaller aligned aperture in
20 the rear wall of the bag catches on the flange so that the bag may be held in an open position to easily receive articles. After the bag is loaded, the bag is disengaged from the shaft by pulling on the bag in a forward direction with sufficient force to dis-
25 tend the smaller rear aperture so that the flange is passed through the rear aperture.

30 The bag support apparatus of the prior art tends to be somewhat complicated in construction, thereby resulting in higher manufacturing costs. In addition, the prior art apparatus has the added disadvantage that it may not be easily utilized to support a plurality of plastic bags in an open position so that the bags may be simultaneously loaded. Also,

the prior art apparatus does not provide a means for engaging the front wall of a bag when the bag is open to automatically hold the bag in a loading position.

- 5 Accordingly, it is a primary object of the invention to provide a simple, relatively inexpensive and effective means for supporting a plurality of bags for easy loading.

Disclosure of the Invention

- 10 In order to achieve the objects of the invention and to overcome the problems of the prior art, the apparatus for supporting and dispensing bags includes a bag support shaft that supports an upright stack of bags by engaging each of the bags in the stack
15 through aligned apertures in the front and rear walls.

- In a preferred embodiment of the invention, the front edge of a bag is pulled outwardly so that a flange that is mounted on the end of the support shaft passes through a large aperture in the front wall
20 of the bag. As the bag is opened, a corresponding smaller aligned aperture in the rear wall catches on the flange and, thereafter, the aperture in the front wall of the bag is engaged with a corresponding extending hanger. In the loading position, the extending hanger supports the front wall of the bag and
25 the support shaft supports the rear wall of the bag.

- Several support shafts and associated extending hangers may be employed to support a plurality of bags so that the bags may be loaded simultaneously.
30 After the bags are loaded, the front wall of each bag is disengaged from its associated hanger and the

back wall of each bag is pulled in a forward direction with sufficient force to distend the smaller rear aperture so that the flange on the support shaft is passed through the rear aperture and the bag is
5 disengaged from the shaft.

Brief Description of Drawings

Figure 1 illustrates a perspective view of a bag support apparatus in accordance with the invention.

10 Figure 2 illustrates a perspective view of a first alternative embodiment of a bag support apparatus in accordance with the invention.

Figure 3 illustrates a perspective view of a second alternative bag support apparatus in accordance with the invention.

15 Best Mode for Carrying Out the Invention

The remaining portion of this specification will describe the preferred embodiments of the invention when read in conjunction with the attached drawings, in which like reference characters identify identical apparatus.
20

Figure 1 shows a perspective view of a bag dispensing and loading apparatus in accordance with the invention. As shown in Fig. 1, a plurality of stacked bags 1, for example plastic bags, having
25 aligned apertures in their respective front and back walls are engaged with associated support shafts 3, each of the shafts passing through the aligned apertures of an associated stack of bags. Each of the support shafts has an outward flange 5 that
30 contacts the front wall of the topmost bag of a

Stack of bags when the bags are engaged with the support shaft.

5 In loading a topmost bag, a front wall 7 of the bag is pulled outwardly from the stack of bags so that the flange 5 of the support shaft 3 passes through an enlarged aperture 9 in the front wall. As the front wall is pulled in an outward direction, a corresponding smaller aligned aperture 11 in the rear wall of the bag catches on the flange 5 so that the rear wall of the bag is supported in a loading position. The extended front wall of the bag is then engaged with an extending hanger 13 by passing the hanger 13 through the enlarged front aperture 9 so that the front wall of the bag is supported on the hanger 13.

10
15 A loaded bag is removed by disengaging the extending hanger 13 from the front wall of the bag and pulling on the bag with sufficient force to distend the small rear aperture so that the flange 5 is passed through the rear aperture and the bag is disengaged from the shaft.

20
25 Fig. 1 shows an embodiment of the invention wherein two support shafts and associated extending hangers are used to simultaneously support two bags in a loading position. However, it should be appreciated that additional support shafts and associated extending hangers may be employed to simultaneously support any number of bags in a loading position.

30 The bag support apparatus of Fig. 1 includes a support rack having support walls 15 and a floor 17 to provide a sturdy means of support for the hanging bags. The front of the support rack is open to allow

loaded bags to be easily removed. It should be understood that the support rack may be fastened in a manner known to the art to a counter, for example a cashier's counter in a store, so that the cashier or other bag loader has ready access to the bags and the merchandise that is to be loaded into the bags.

Figure 2 illustrates an alternative embodiment of the invention wherein a bag support rack is open at its front and rear portions to allow easy access to the associated supported bags. Also, the support walls for the support shafts and associated extending hangers 13 are angled outwardly so that the top end of a bag is held open as widely and as tightly as possible. In operation, each bag of a stack of bags is supported on the support shaft 3 and an associated extending hanger 13 in the manner described for the embodiment of Fig. 1. However, since the bag support rack of Fig. 2 is open in the front and the rear, loaded bags may be easily removed from either the front or the rear portion of the rack.

Figure 3 illustrates an alternative embodiment of the invention wherein opposing extending hangers 13 and 13a are used to support a bag for loading. In operation, a stack of bags may be placed in proximity with the bag support rack of Fig. 3 and, when it is desired to load a bag, a topmost bag may be removed from the stack and the front and back walls of the bag may be engaged with the opposing extending hangers 13 and 13a through associated apertures in the walls. Of course, for such an application, the aligned apertures in the front and back walls of each bag may be of the same dimensions.

Extending support arms 19 and associated extending hangers 13 and 13a need only have sufficient structural strength to maintain a bag in an open position, particularly if the weight of a loaded bag is supported by a floor portion, for example a counter passing beneath the extending support arms 19.

It should be understood that the extending hangers 13a of the embodiment of Fig. 3 may be used to support a plurality of stacked bags in the same manner as the support shafts 3 of Figs. 1 and 2. If the hangers 13a are each employed to support a stack of bags, successive bags in a stack may be extended to engage the associated opposite hanger 13 for loading in the same manner as was described for the embodiments of Figs. 1 and 2.

The extending hangers 13 and 13a for the embodiments of Figs. 1-3 have been shown as upwardly extending loops of rigid material, for example wire. However, it should be appreciated that bag support hangers having a different structure may be employed without departing from the spirit of the invention. For example, upwardly turned metal tabs or hooks may be used in place of the loop hangers 13 and 13a for engaging apertures in the front or rear walls of a bag. Also, the hanging apertures in the walls of a bag may be formed in any size or shape without departing from the spirit of the invention.

It should be understood that the invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the

-7-

claims rather than by the foregoing description, and all changes which come within the meaning and range of the equivalents of the claims are therefore intended to be embraced therein.

CLAIMS

~~XXXXXXXXXXXXXXXXXXXX~~

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Apparatus for supporting at least one stack of bags and maintaining a forwardmost bag in said at least one stack in an extended loading position, comprising:

5 stack support means for engaging aligned apertures in the front and rear walls of the bags in said at least one stack to support the stack in an upright position, said stack support means having means for engaging a rear aperture in the rear wall of said
10 forwardmost bag when the forwardmost bag is in said extended loading position, and

hanger means positioned opposite said stack support means for engaging a front aperture in the front wall of said forwardmost bag when the bag is in said
15 extended loading position.

2. The apparatus of claim 1 including a plurality of said stack support means and associated hanger means for maintaining a plurality of bags in an extended loading position.

3. The apparatus of claim 1 including two stack support means mounted to face in opposite directions, and a hanger means positioned opposite each of the two stack support means, each of the stack support means
5 supporting an associated stack of bags.

4. The apparatus of claim 1 wherein said stack support means is a support shaft having a flange on its free end, the flange dimensioned to pass through

the front aperture of a bag and to resist passing
5 through the rear aperture of the bag.

5. The apparatus of claim 1 wherein said hanger means is an extending loop having a free end that is bent upwardly to engage and retain the front wall of a bag.

6. The apparatus of claim 1 including side support walls for mounting a stack support means and an associated hanger means and supporting a bag while the bag is loaded.

7. The apparatus of claim 6 further including at least a bottom support wall for supporting the weight of a bag while the bag is loaded.

8. The apparatus of claim 7 including a rear wall for supporting a bag while the bag is loaded.

9. Apparatus for supporting at least one bag in an extended loading position, comprising:

5 support means for engaging a rear aperture in the rear wall of a bag when the bag is in said extended loading position, and

hanger means positioned opposite said support means for engaging a front aperture in the front wall of a bag when the bag is in said extended loading position.

10. The apparatus of claim 9 wherein said support means is an extending loop having a free end that is bent upwardly to engage and retain the rear wall of a bag.

-10-

11. The apparatus of claim 9 wherein said hanger means is an extending loop having a free end that is bent upwardly to engage and retain the front wall of the bag.

DATED THIS 19th DAY OF APRIL, 1979

HEIKKI S. SUOMINEN

EDWD WATERS & SONS
PATENT ATTORNEYS
50 QUEEN STREET
MELBOURNE
AUSTRALIA

46,304/79

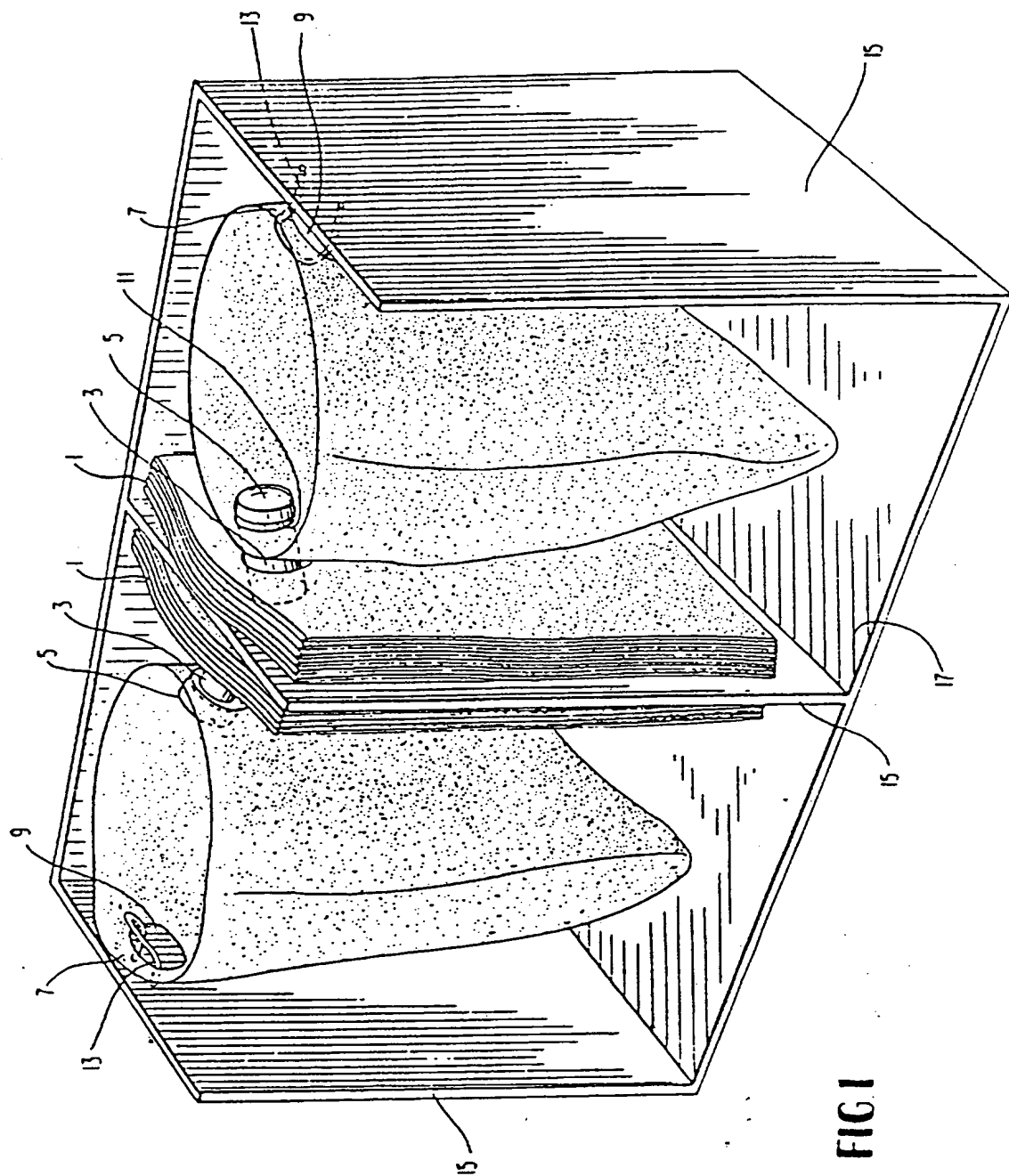


FIG2

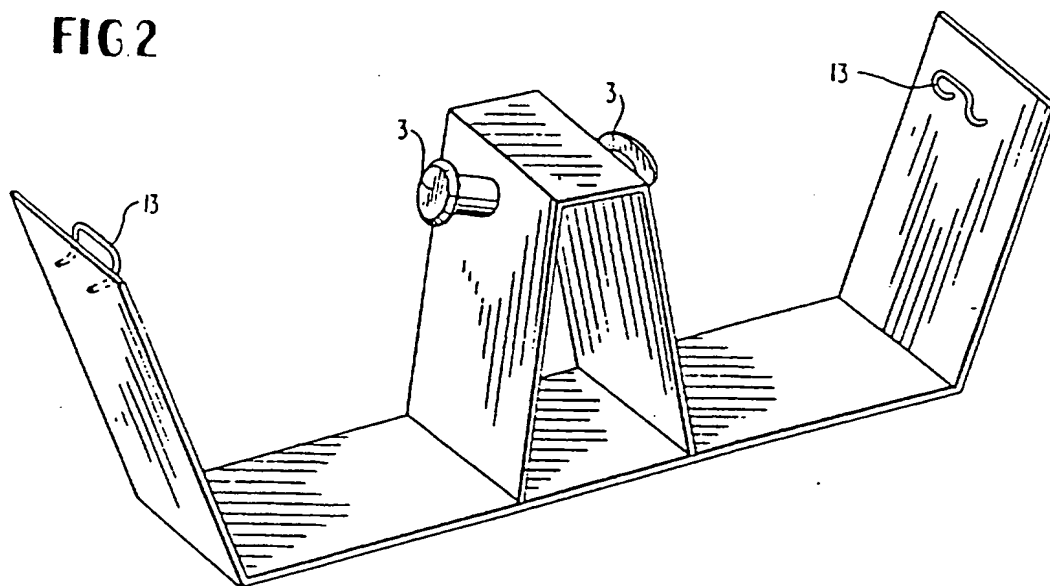


FIG3

